



An Introduction to jQuery (+ a Primer on HTML and CSS)

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HTML and CSS Primer

What is HTML?

- ✦ HTML is an acronym for HyperText Markup Language.
- ✦ HTML is a language for annotating (marking up) a document to define its structure (e.g. titles, paragraphs, or links).
- ✦ The most common type of documents marked up with HTML are web pages.
- ✦ The process of a web browser interpreting a HTML document and displaying it is called *rendering*.

HTML Tags

- * Documents are annotated by adding tags. Tags are enclosed in angle brackets, i.e. `<tag>`.
- * Most tags are used in pairs, in the form `<tag> content </tag>`.
- * Tags that aren't used in pairs have the form `<tag />`.
- * Tags can be nested e.g.
`<tag1> content <tag2> content </tag2> </tag1>`
- * Nested tags must always be opened and closed in reverse order e.g.
never `<tag1> content <tag2> content </tag1> </tag2>`

Basic Tags

- * Web page title: `<title> ... </title>`
- * Paragraph: `<p> ... </p>`
- * Top level header: `<h1> ... </h1>`
- * Image: ``
- * Emphasise: ` ... `
- * Strongly emphasise: ` ... `

Tag Attributes

- * Tags can contain additional information as attributes.
- * Attributes have the form:
`<tag attribute-name="attribute-value"> ... </tag>`
- * Some attributes are required, some are optional.
- * For example an image tag has two required attributes;
src - the URL of the image file,
alt - a text description the image.

e.g. ``

HTML Document Structure

- * The first tag in a HTML document is the `<html>` tag. The whole document is nested within this tag e.g.
`<html> rest of document </html>`
- * The `<html>` tag is required to contain one `<head>` and one `<body>` tag.
- * The `<head>` tag contains document metadata, information about the document that is not part of the document content.
- * The `<body>` tag contains the document content.

HTML Document Structure

- * The first line of a HTML document is a doctype declaration.
- * This is not a part of the HTML document, it is an instruction telling the web browser what version of HTML the document is written in.
- * Doctype declarations are outside the scope of this primer.

A Complete HTML Document

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" lang="en" xml:lang="en">

  <head>
    <title>Your page title goes here.</title>
  </head>

  <body>
    Your content goes here.
  </body>

</html>
```

HTML Examples

* See [example-1-1.html](#), [example-1-2.html](#) and [example-1-3.html](#)

What is CSS?

- * CSS is an acronym for Cascading Style Sheets.
- * CSS is a language for describing the presentation of a marked up document, usually a HTML document.

CSS Syntax

- * CSS has a very simple syntax:

```
selector {  
  property: value;  
  property2: value2;  
  ...  
  propertyN: valueN;  
}
```

- * Selectors tell the browser what element you're styling.
- * Properties tell the browser how to style the selected element.

CSS Selectors I

- * Tags:
`p { ... } table { ... } h1 { ... }`
- * Decendents:
`ul li { ... } ol li { ... }`
- * Children:
`ul>li { ... } ol>li>ol>li { ... }`
- * Multiple Selectors:
`ul, ol { ... } p, h1 { ... }`

A Few Example CSS Properties

- * color: <color>
color: red; color: #ff0000; color:#f00 color: rgb(255,0,0)
- * background-color: <color>
background-color: green; background-color:#0f0 background-color: rgb(0,255,0)
- * font-size: <size><units>
font-size: 12pt; font-size: 16px; font-size: 1.5em;
- * margin: <all><units>
margin: <top-bottom><units> <right-left><units>
margin: <top><units> <right><units> <bottom><units> <left><units>
margin: 20px; margin: 10px 20px; margin: 50px 5px 5px 20px;

Complete CSS Rules

- * This rule will make all ordered lists have white text on a black background:

```
ol {  
  color: white;  
  background-color: black;  
}
```

- * This rule will make all paragraphs have red text and a 20px margin:

```
p {  
  color: red;  
  margin: 20px;  
}
```

Embedding or Linking CSS

- ✦ Embedding:

CSS rules can be embedded within a <style> tag in the <head> of a HTML document:

```
<head>
  <style type="text/css">
    p { margin: 20px; }
  </style>
</head>
```

- ✦ Linking an External Style Sheet:

CSS rules can be placed in a separate file:

```
<head>
  <link rel="stylesheet" type="text/css" href="style.css">
</head>
```

CSS Examples I

* See [example-1-4.html](#)

IDs and Classes

- * IDs and classes are used to style specific elements or groups of elements. IDs identify a unique element, classes identify groups of elements.

- * In HTML IDs and classes are identified using attributes. E.g:

```
<div id="summary"> <li class="ingredients">
```

- * Elements can have more than one class. E.g:

```
<div id="story-8" class="story unread"> <div id="story-7" class="story read">
```

CSS Selectors II: IDs and Classes

- ✦ In CSS, IDs are identified by a # symbol in the selector:

```
#summary { ... } #story-8 { ... }
```

- ✦ Classes are identified by a . symbol in the selector:

```
.story { ... } .unread { ... } .read { ... }
```

- ✦ Classes and IDs can be joined to a tag to make a more specific selector:

```
div#summary { ... } ol.ingredients { ... }
```

CSS Examples II

* See [example-1-5.html](#)

An introduction to jQuery

What is JavaScript?

- * JavaScript is a programming language.
- * The most common use of JavaScript is to enhance webpages.
- * Common enhancements are user interface improvement, handling dynamic events, and loading dynamic content into a page after it's been rendered.

What is jQuery?

- * *“jQuery is a fast and concise JavaScript Library that simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development. jQuery is designed to change the way that you write JavaScript.” - jquery.com*
- * jQuery makes adding dynamic behaviour to your web pages easy.

Linking or Embedding JavaScript

- * Like CSS, JavaScript can be embedded in a HTML document or linked to a HTML document from a separate file. Both methods use the `<script>` tag in the document `<head>`.

- * Embedding:

```
<script type="text/javascript"> ... </script>
```

- * Linking to external file:

```
<script type="text/javascript" src="example.js"></script>
```

Including jQuery

- * Download from jquery.com, and link to your own copy:

```
<script type="text/javascript" src="jquery.js"></script>
```

- * Use the Google APIs hosted copy:

```
<script type="text/javascript" src="https://ajax.googleapis.com/ajax/libs/jquery/1.4.4/jquery.min.js"></script>
```

Using jQuery

* Usually two steps:

1. find/select a part of the HTML document,
2. do something with it.

* Step 1: jQuery finds parts of the document using a CSS-like selector

```
$("p") $("ol") $("ol>li") $("ol, ul") $(".unread") $("#story-8")
```

* Step 2: jQuery does something with the selected elements.

```
$("p").hide(); $("ol").addClass("unread");  
$("li").click(function(){ this.hide(); });
```


Using jQuery

- * Almost everything we do in jQuery reads or manipulates the document, so we need to make sure that the document is loaded and ready before we do anything else.
- * To do this, we register a ready event for the document.

```
$(document).ready(function(){  
  // do stuff when DOM is ready  
});
```

Registering Events

- * Make all paragraphs show an alert when clicked:

```
$(document).ready(function( ){  
  $("p").click(function( ){  
    alert("You clicked on a paragraph.");  
  });  
});
```

- * Make all paragraphs show an alert when hovered over:

```
$(document).ready(function( ){  
  $("p").mouseenter(function( ){  
    alert("You hovered over a paragraph.");  
  });  
});
```

Some More Events

- * `.change()`
- * `.dblclick()`
- * `.keypress()`
- * `.scroll()`
- * `.focus()`

Document Manipulation

- * Hide paragraphs when clicked:

```
$(document).ready(function() {  
  $("p").click(function() {  
    $(this).fadeOut();  
  });  
});
```

- * Change paragraph content when clicked:

```
$(document).ready(function() {  
  $("p").click(function() {  
    $(this).html("Updated Content");  
  });  
});
```

Document Manipulation

- * Add a CSS class when clicked:

```
$(document).ready(function( ){\n  $("p").click(function( ){\n    $(this).addClass("red");\n  });\n});
```

- * Make collapsible sections:

```
$(document).ready(function( ){\n  $("h2").click(function( ){\n    $(this).next().fadeToggle();\n  });\n});
```

Questions and Workshop

- * Questions?
- * See [example-2-3.html](#) for workshop problems